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=> d his

        (FILE 'HOME' ENTERED AT 04:56:47 ON 25 SEP 2004)
        FILE 'CA' ENTERED AT 04:57:00 ON 25 SEP 2004
L1  2641  S DILUT?(3A)(AUTOMAT? OR ONLINE OR INLINE OR ONSTREAM OR INSTREAM OR
            FLOW(1A)INJECT? OR SAMPLE(1A)PREPAR? OR LINE OR STREAM)
L2   127  S L1 AND MASS SPECTRO?
L3   126  S L1 AND ISOTOP?
L4   131  S L2-3 NOT PY>2000
L5    93  S L2-3 AND DILUT?(1A)(AUTOMAT? OR ONLINE OR INLINE OR ONSTREAM OR
            INSTREAM OR FLOW(1A)INJECT? OR SAMPLE(1A)PREPAR? OR LINE OR STREAM)
L6    68  S L4 AND L5
L7     6  S L4 AND(ELECTROSPRAY OR IONSPRAY OR THERMOSPRAY OR(ELECTRO OR ION
            OR THERMO)(W)SPRAY OR ATMOSPH?(W)PRESSURE(W)(IONIZ? OR INTERFAC?))
L8     7  S L5 AND 2001/PY
L9    78  S L6-8


=> d l9 bib,ab 1-78
```

L9 ANSWER 5 OF 78   CA   COPYRIGHT 2004 ACS on STN
AN 135:238753 CA
TI **Flow injection** on-**line** dilution for multi-element determination in
    human urine with detection by inductively coupled plasma **mass
    spectrometry**
AU Wang, J.; Harald Hansen, E.; Gammelgaard, B.
CS Department of Chemistry, Technical University of Denmark, Lyngby, 2800,
    Den.
SO Talanta (**2001**), 55(1), 117-126
AB A simple **flow injection online diln.** procedure with detection by
    inductively coupled plasma **mass spectrometry** (ICP-MS) was developed for
    the detn. of Cu, Zn, As, lead, Se, Ni and Mo in human urine. Matrix
    effects were minimized by employing a diln. factor of 16.5 with online
    std. addn., and 103Rh was used as internal std. to compensate for
    signal fluctuation. The procedure was validated by the anal. of two
    std. ref. materials SRM 2670 (NIST) and Seronorm Trace Elements in
    Urine. Recovery expts. were performed by spiking the ref. materials as
    well as artificial urine. The detection limits (μg L-1) were 0.12,
    0.96, 0.30, 0.09, 0.45, 0.08, 0.09, and the precisions (relative std.
    deviation,%) were 2.6, 2.3, 3.0, 3.7, 3.7, 4.9, 2.8 for Cu, Zn, As, Pb,
    Se, Ni and Mo, resp. The procedure was applied to the anal. of 41
    human urine samples. No correlations between the concns. of the
    elements were obsd.

L9 ANSWER 9 OF 78   CA   COPYRIGHT 2004 ACS on STN
AN 133:358821 CA
TI Rapid bioanalytical determination of dextromethorphan in canine plasma
    by dilute-and-shoot preparation combined with one minute per sample LC-
    MS/MS analysis to optimize formulations for drug delivery
AU McCauley-Myers, D. L.; Eichhold, T. H.; Bailey, R. E.; Dobrozsi, D. J.;
    Best, K. J.; Hayes, J. W.; Hoke, S. H.
CS Health Care Research Center, The Procter and Gamble Company, Mason, OH,

SO   Journal of Pharmaceutical and Biomedical Analysis (2000), 23(5), 825-835

AB   The detn. of dextromethorphan in canine plasma is used to demonstrate the high throughput bioanal. approach of **automated dil.**-and-shoot (DAS) **sample prepn.** followed by a 1 min isocratic liq. chromatog. tandem **mass spectrometry** (LC-MS/MS) anal. Dil.-and-shoot prepn. is commonly used for the detn. of drugs in several biol. matrixes such as urine and saliva, but is not typically used with plasma samples because the amt. of protein present in plasma can lead to a variety of problems including column failure. As a result, plasma sample prepn. usually removes protein by pptn., extn. or filtration; however, the dil.-and-shoot approach solubilizes proteins throughout the chromatog. portion of the assay. The attributes of this approach are compared with a previously validated liq./liq. extn. procedure for detn. of dextromethorphan in plasma. Accuracy and precision of both methods are similar. The lower limit of quantitation (LLOQ) of the dil.-and-shoot approach is much higher at 2 ng/mL vs. 5 pg/mL with the liq./liq. extn.; however, the sample throughput of the prepn. portion of the dil.-and-shoot approach is more than 50-fold greater. The ruggedness of the dil.-and-shoot method was thoroughly investigated because of the problems traditionally assocd. with the direct injection of dild. plasma onto an LC-MS/MS instrument. With the optimal conditions, greater than 1000 injections of dild. plasma have been successfully performed on a single column in less than 19 h making this technique an excellent approach for the rapid prepn. and high throughput of plasma samples contg. drug levels in the ng/mL range or higher. Application of this methodol. to measure the levels of dextromethorphan in canine plasma to evaluate drug delivery from various formulations is also presented.

AN   133:232176 CA
TI   Uncertainty calculations for amount of chemical substance measurements performed by means of **isotope** dilution **mass spectrometry** as part of the PERM project

AU   Dobney, A.; Klinkenberg, H.; Souren, F.; Van Borm, W.
CS   DSM Research, Geleen, 6160 MD, Neth.
SO   Analytica Chimica Acta (2000), 420(1), 89-94

AB   DSM Research was a partner in the certification round of a project, organized under the auspices of the European Commission's Fourth Framework Stds. Measurement and Testing Program, to produce two polyethylene ref. materials. The project, entitled Polymer Elemental Ref. Material (PERM SMT4-CT95 3024) required the detn. of the concns. of Cr, Cd, Hg and Pb in two polyethylene materials which were identified as PERM T3 high and PERM T3 low. Anal. was accomplished by an inhouse developed 'online' isotope diln. **mass spectrometry** (IDMS) method using quadrupole ICPMS. This paper focuses on calcg. the uncertainty of these IDMS measurements. Since all anal. measurement results have an uncertainty assocd. with them, it is considered best practice, within metrol. circles, to state an uncertainty, as an

integral part of any measurement result. The authors used a Monte Carlo simulation to est. the uncertainties assocd. with the measured concns. of Cr, Cd, Hg and Pb in the PERM T3 (high and low) materials. By participating in an interlab. exercise the authors were able to compare the authors' results with those of other labs. that used both classical IDMS and other techniques. The authors' results, agreed with the overall mean of all participating labs., within stated uncertainties. Also the authors' uncertainties derived from Monte Carlo simulation were of the same magnitude as those obtained for the classical IDMS approach.

L9 ANSWER 16 OF 78 CA COPYRIGHT 2004 ACS on STN
AN 131:222686 CA
TI Use of FIA systems for on-line dilution in multielement determination by ICP-MS
AU Gomes Neto, Jose Anchieta; Silva, Jose Bento Borba; Souza, Ivan Goncalves; Curtius, Adilson Jose
CS Departamento de Quimica Analitica, Instituto de Quimica - UNESP, Araraquara, 14800-900, Brazil
SO Laboratory Robotics and Automation (1999), 11(4), 240-247
AB A flow-injection (FI) system to match concns. was used as an auto-diluter in multielement detn. by inductively coupled plasma-mass spectrometry (ICP-MS). The flow system comprised loop-based injection or a timed valve that introduced a variable sample vol. into a spray chamber through a std. Meinhard nebulizer of an ICP-MS. Routinely analyzed samples such as H2O, plant, and steel were selected. The accuracy of multielement detn. was checked against H2O std. ref. material from the National Institute of Stds. and Technol. (1643d), plant std. ref. material from the National Bureau of Stds. (1572 citrus leaves), and steel std. ref. material from the National Bureau of Stds. (AISI 4340). The measuring system was calibrated with a multielement soln., yielding a linear plot with good precision [relative std. deviation < 3%, n = 12]. The results were in agreement at a 95% confidence level with the certified values for the ref. materials and also with those obtained by continuous aspiration and by (FI) with a discrete vol.

L9 ANSWER 17 OF 78 CA COPYRIGHT 2004 ACS on STN
AN 130:288716 CA
TI Improving sensitivity and detection limits in ICP-MS with a novel high-efficiency sample introduction system
AU Debrah, Ebenezer; Legere, Guy
CS Perkin-Elmer Sciex Instruments, Concord, ON, L6K 4V8, Can.
SO Atomic Spectroscopy (1999), 20(2), 73-77
AB The analyte transport efficiency using pneumatic nebulization is often limited by the spray chamber. Newer spray chamber designs with improved flow patterns still lose most of the analyze down the drain, esp. at sample flow rates >100 μL/min. This paper describes a novel sample introduction approach for plasma spectrometry that improves the analyze sensitivity by at least an order of magnitude for the elements tested, with significantly enhanced detection limits compared to

conventional soln. nebulization. Very good agreement was achieved
between the certified values and the results obtained using this
approach for the detn. of trace elements in the std. ref. material NI-
ST 1643d. The short-and long-term stability in different sample
matrixes was <3% and 4%, resp. This novel sample introduction system
also allows real-time **online** sample **diln.** to be

AN 130:60255 CA
TI The CETAC ADX-500 autodiluter system: a study of dilution performance
    with the ELAN 6000 ICP-MS and ELAN software

AU May, Thomas W.; Wiedmeyer, Ray H.
CS Biological Resources Division, Columbia Environmental Research Center,
    U.S. Geological Survey, Columbia, MO, 65201, USA
AB The CETAC ADX-500 autodiluter system was tested with ELAN v. 2.1
    software and the ELAN 6000 ICP-MS instrument to det. **online automated
    diln.** performance during anal. of std. solns. contg. nine analytes
    representative of the mass spectral range (mass 9 to mass 238). Two or
    more diln. schemes were tested for each of 5 test tube designs. Diln.
    performance was detd. by comparison of analyte concn. means of dild.
    and nondild. stds. Accurate dilns. resulted with one syringe pump
    addn. of diluent in small diam. round-bottomed (13 mm OD) or conical-
    tipped (18 mm OD) tubes and one or more syringe pump addns. in large
    diam. (28 mm OD) conical-tipped tubes. Inadequate diln. mixing which
    produced high analyte concn. means was obsd. for all dilns. conducted
    in flat-bottomed tubes, and for dilns. requiring multiple syringe
    addns. of diluent in small diam. round-bottomed and conical tipped
    tubes. Effective mixing of dild. solns. depends largely upon tube
    diam. and liq. depth: smaller tube diams. and greater liq. depth
    resulted in ineffective mixing, whereas greater tube diam. and
    shallower liq. depth facilitated effective mixing. Two design changes
    for the autodiluter were suggested that would allow effective mixing to
    occur using any diln. scheme and tube design.

AN 127:365434 CA
TI **Online dilution** for ICP-MS with a flow injection recirculating loop
    manifold

AU Tyson, Julian F.; Ge, Honghong; Denoyer, Eric R.
CS Dep. Chemistry, Univ. Massachusetts, Amherst, MA, 01003-34510, USA
AB A FI manifold consisting of a recirculation loop was coupled to a
    plasma source **mass spectrometer** to provide successive **online dilns.**
    Part of the loop is injected into the carrier **stream** followed by **diln.,**
    within the loop, of the remaining part with the carrier soln. For a
    manifold with a calcd. diln. factor of 2.01 (based on the vol. ratio),
    10 successive injections gave a mean of 1.99 and a 95% confidence
    interval of □.065 for the ratio of successive peak heights. The
    between-run precision for a particular peak height ranged from 1.7 to
    3.2% relative std. deviation. In a study of the decay of the concn.

oscillations in the recirculating loop, the reciprocal of the time to achieve uniform concns. decreased linearly with increasing flow rate and decreasing loop vol. The diln. behaviors of 19 elements were studied. Of these, nine (Ag, Ba, Cr. Cu, Ni, Pb, Sb, Tl and U) could be dild. from 100 ppb by three orders of magnitude with a precision of 5% relative std. deviation or better, six (As, Cd, Co, Th, V, Zn) could be dild. over the same range with precisions between 5 and 10% relative std. deviation, and four elements (Be, Mo, Se and Hg) displayed a systematic decrease in the diln. factor which was interpreted as retention of these elements within the loop. The influence of a wine matrix on the detn. of Ce was removed by five successive dilns. with a factor of 3.04 per injection for a total diln. factor of 260. For a total loop vol. of 1-2 mL, rapid damping of the concn. oscillations could be produced by the destructive interference produced by a two-line network (split and confluence) with tube lengths of 50 and 25 cm.

L9 ANSWER 31 OF 78 CA COPYRIGHT 2004 ACS on STN
AN   127:80343 CA
TI   Analysis of Cr, Ni, Cd, and Pb in food samples by flow injection ICP-MS
AU   Harrington, Christopher F.; Fairman, Ben E.; Catterick, Tim
CS   Laboratory Government Chemist, Teddington, TW11 OLY, UK
SO   Spectroscopy Europe (1997), 9(1), 10,12,14,16
AB   A method was developed using flow injection anal. (FIA) for the **online diln**. and spiking with internal std. for the anal. of Cr, Ni, Cd, and Pb in food digests. The FIA method improved the reporting limits and accuracy for the anal. of a proficiency testing std. (aquacheck 101), and the reporting limits and accuracy for the anal. of an oyster tissue certified ref. material, compared to the conventional inductively coupled plasma optical emission spectroscopy (ICP-MS) method. The developed method is also quicker than the conventional method, as no off-**line** sample **diln**. is needed and it can be extended to cover up to 10 more elements.

L9 ANSWER 35 OF 78 CA COPYRIGHT 2004 ACS on STN
AN   126:282414 CA
TI   Determination of trace amounts of zinc in water samples by **flow injection isotope dilution** inductively coupled plasma **mass spectrometry**
AU   Hwang, Tarn-Jiun; Jiang, Shiuh-Jen
CS   Department of Chemistry, National Sun Yat-Sen University, Kaohsiung, 80424, Taiwan
SO   Analyst (Cambridge, United Kingdom) (1997), 122(3), 233-237
AB   **Flow injection isotope diln**. ICP-MS was applied to the detn. of zinc in several water samples. A matrix sepn. and preconcn. system was used for the sepn. of Mg, Ca, S and Cl matrix and preconcn. of trace amts. of zinc in high salt content samples. A complete preconcn. cycle was accomplished in 4 min. The **isotope** ratio for each injection was calcd. from the peak areas of the flow injection peaks. The precision for the **isotope** ratio detn. was better than 1.7%. A detection limit of 0.014 ng/mL-1 was obtained for zinc with this method. The method was successfully applied to the detn. of trace levels of zinc in SLRS-2 riverine water, SLEW-2 estuarine water, NASS-3 open ocean seawater and

CASS-3 nearshore seawater ref. samples.

AN   124:218822   CA
TI   Evaluation of a flow injection system combined with an inductively
      coupled plasma **mass spectrometer** with **thermospray** nebulization for the
      determination of trace levels of platinum
AU   Parent, M.; Vanhoe, H.; Moens, L.; Dams, R.
CS   Laboratory of Analytical Chemistry, Institute for Nuclear Sciences,
      Ghent University, Proeftuinstraat 86, Ghent, B-9000, Belg.
SO   Analytica Chimica Acta (1996), 320(1), 1-10
AB   The coupling of a flow injection system to an inductively coupled
      plasma **mass spectrometer** using **thermospray** nebulization for the detn.
      of Pt is evaluated. The results are compared with pneumatic
      nebulization. The flow injection system provides the possibility of
      online sample **diln.** and **online** standardization. A comparative study
      was made between **online isotope diln.**, **online** std. addns. and external
      calibration emphasizing accuracy, precision and flexibility of the
      method. Several parameters of **thermospray** and flow injection were
      evaluated. Sensitivity, background and detection limits were studied
      as well as the peak integration method to be used with the flow
      injection system. The detection limits, using flow injection (200 μL
      loop) and partial integration of the peak, were in the range of 25 ng/l
      (5 pg abs.) and 8 ng/l (2 pg abs.) for pneumatic and **thermospray**
      nebulization, resp. The optimized procedure was used for the detn. of
      Pt in corn leaves, mouse liver and a Ca3(PO4)2 matrix.

AN   121:220600   CA
TI   Mass-spectral analysis of gases
IN   Brand, Willi; Habfast, Karleugen
PA   Finnigan Mat GmbH, Germany
SO   Brit. UK Pat. Appl., 22 pp.
PI   GB 2273561   A1   19940622   GB 1993-24729   19931202
PRAI DE 1992-4242860   19921218
AB   Mass-spectral anal. of gases supplied simultaneously or sequentially in
      a carrier gas to the spectrometer where a 1st component of the gases
      has a different vol. ratio with respect to the carrier compared to a
      2nd component is characterized by decreasing the concn. of the
      component with the larger vol. ratio by an addnl. supply of carrier
      gas. App. operating on the open split system and characterized by
      provision of an addnl. **dilg. line** for the carrier gas is also
      disclosed.

AN   121:101332   CA
TI   Determination of lead by flow-injection inductively coupled plasma **mass
      spectrometry** comparing several calibration techniques
AU   Goossens, Jan; Moens, Luc; Dams, Richard
CS   Laboratory of Analytical Chemistry, Institute for Nuclear Sciences,
      Ghent University, Proeftuinstraat 86, Ghent, B-9000, Belg.

SO   Analytica Chimica Acta (1994), 293(1-2), 171-81

AB   In this paper the authors have evaluated the coupling of a modular
     flow-injection system to an inductively coupled plasma **mass
     spectrometer** for lead detns. by direct anal. of wines and urine
     samples. The flow-injection system used allows an **online** sample **diln.**
     and an **online** addn. of internal std. and calibrant soln. It was found
     that particular attention should be paid to the adjustment of the
     nebulizer gas flow rate in order to obtain max. sensitivity and
     precision. In this way and for the exptl. set-up described, R.S.D.
     values ≤1% on the 208Pb+ signal for 5 consecutive injections could
     readily be achieved. The relative merits of external calibration, std.
     addns. and **isotope** diln. for the calibration of the transient lead
     signals were compared. It appeared that from the viewpoint of
     accuracy, precision and flexibility, the std. addns. method is the most
     preferable procedure. Further, it was found that the precision of
     isotope ratio detns. is degraded in comparison to continuous
     nebulization. However, matrix-induced mass fractionation on the lead
     isotope ratios as obsd. for the continuous nebulization of an aq.
     ethanolic (wine) matrix did not occur in flow-injection anal. The
     quantitation of lead by direct anal. of undiluted wine and urine
     samples using this flow-injection method in combination with std.
     addns. calibration resulted in very accurate results (compared to
     certified and ref. values). Excellent relative std. deviations (for 5
     consecutive detns.) were obtained ranging from 1% (50 µg/L Pb in white
     wine) to 5% (3.6 µg/L Pb in urine).

DU   ANSWER 54 OF 78   CA   COPYRIGHT 2004 ACS on STN
AN   115:131340   CA
TI   Determination of serum cholesterol by **isotope** dilution **mass
     spectrometry** with a benchtop capillary gas chromatography/**mass
     spectrometer**: comparison with the national reference system's
     definitive and reference methods

AU   Eckfeldt, John H.; Lewis, Linda A.; Belcher, John D.; Singh, Jasbir;
     Frantz, Ivan D., Jr.
CS   Med. Sch., Univ. Minnesota, Minneapolis, MN, 55455, USA
SO   Clinical Chemistry (Washington, DC, United States) (1991), 37(7), 1161-
     5

AB   An **isotope** diln. **mass spectrometric** cholesterol method with [25,26,27-
     13C]cholesterol as internal std. and a benchtop gas chromatog./**mass
     spectrometer** (GC/MS) was developed that is much easier and less time
     consuming than previously described Ref. and Definitive Methods for
     cholesterol. The internal std., cholesterol stds., and unknown
     specimen are delivered volumetrically with an **automated dilutor** and the
     sapong. reagent. After sapon., extn., and derivatization, specimens
     are injected into a benchtop quadrupole MS with an autosampler.
     Unknown cholesterol concns. are calcd. automatically by comparing the
     peak area ratio of the m/z = 368, 371 ion pair with the ratios for the
     cholesterol stds. (0-12.93 mmol/L). Within-run and day-to-day
     imprecision of 0.44% and 0.95% were found, resp. when specimens were
     assayed singly. In several lyophilized and frozen Std. Ref. Material

(SRM) pools, cholesterol results with this GC/MS method averaged 0.4% less than the National Institute for Stds. and Technol. definitive GC/MS result performed about three years earlier. The GC/MS results averaged 1.3% and 2.0% less than results by the National Ref. System (NRS) Abell-Levy-Brodie-Kendall (ALBK) results from clin. specimens and the SRM pools, resp. These results are consistent with the previously reported bias between the NRS Ref. and Definitive Methods and the 0.1% per yr decrease in cholesterol concns. in SRM pools as detd. by GC/MS anal. These results further emphasize the small but consistent bias between cholesterol results by isotope diln. mass spectrometry and the ALBK Ref. Method, the latter being the basis for the National Cholesterol Education Program guidelines and population ref. values.

L9
AN ANSWER 55 OF 78 CA COPYRIGHT 2004 ACS on STN
     115:125715 CA
TI   Automated spike preparation system for Isotope Dilution Mass
     Spectrometry
AU   Maxwell, Sherrod L., III; Clark, John P.
CS   Westinghouse Savannah River Co., Aiken, SC, 29808, USA
SO   Nuclear Materials Management (1990), 19, 199-202
AB   Isotope Diln. Mass Spectrometry (IDMS) is a method frequently employed
     to measure dissolved, irradiated nuclear materials. An automated spike
     prepn. system was developed at the Savannah River Site (SRS) to
     dispense spikes for use in IDMS anal. methods. The new system employs
     a high precision SMI Model 300 Unipump dispenser interfaced with an
     electronic balance and a portable Epson HX-20 notebook computer to
     automate spike prepn. Using the computer to collect duplicate net wts.
     on a predetd. no. of spike containers, dispensing accuracy is confirmed
     by a statistically-based sampling plan. The d. of the spike soln., the
     vol. setting on the Unipump dispenser, and the calcd. net wts. of the
     spikes, the av. wt. of the spikes are calcd. along with the obsd.
     variance est. If the obsd. variance control limits, the spikes are
     released and treated as having equal quantities of the spiked isotope
     within the calcd. uncertainty est. This feature eliminates a whole
     layer of bookkeeping and the need to track individual spike containers
     and their individual quantities of the spiked isotope.

L8
AN ANSWER 56 OF 78 CA COPYRIGHT 2004 ACS on STN
     113:125836 CA
TI   Apparatus and process for producing low-concentration gas mixtures,
     especially for mass spectrometry
IN   Mettes, Jacques; Kimura, Takako; Schack, Michael
PA   Air Liquide SA pour l'Etude et l'Exploitation des Procedes Georges
     Claude, Fr.
SO   Eur. Pat. Appl., 10 pp.
PI   EP 370151   A1   19900530   EP 1988-402920   19881121
     US 5054309   A   19911008   US 1989-437615   19891117
PRAI EP 1988-402920   19881121
AB   The process and app. are described where gas mixts. are produced by a
     plurality of diln. steps of a high-concn. std. gas with a high-purity
     diluent gas. As soon as the high-purity diluent gas is generated, no

further contaminants such as gaseous impurities are added during the
further mixing or dilg. steps of the process. Only orifices or needle
valves are used in the mixing or **dilg. lines** while mass flow
controllers and pressure regulators are placed upstream, at the output
of the gas sources and/or downstream, i.e. in the gas venting lines.
Application to trace anal. of gases with **atm.-pressure-ionization mass
spectrometry** is indicated, as well as use of this process in manufg.
semiconductor devices.

L9   ANSWER 60 OF 78   CA   COPYRIGHT 2004 ACS on STN
AN   112:131224   CA
TI   On-**line dilution**, steady-state concentrations for inductively coupled
      plasma spectrometry achieved by tandem injection and merging-stream
      flow injection
AU   Israel, Yecheskel; Lasztity, Alexandra; Barnes, Ramon M.
CS   Lederle Grad. Res. Cent., Univ. Massachusetts, Amherst, MA, 01003-0035,
      USA
SO   Analyst (Cambridge, United Kingdom) (1989), 114(10), 1259-65
AB   Steady-state concns. have been achieved by **online diln., flow injection**
      techniques with conventional instrumentation. An approach employing
      tandem injection for **online diln**. was applied to obtain a steady-state
      concn. The deviation from signal stability resulting from concn.
      variations or ripples hampered exploitation of this approach for **online
      diln**. except over a limited range. However, when tandem injection was
      coupled with a single- or, esp., double-confluence for the diluent,
      diln. was achieved over a wide range (up to 900-fold). Further,
      steady-state concns. were obtained without concn. ripples. With the
      combined tandem injection and merging stream the emission signal
      variation with inductively coupled plasma (ICP) spectrometry compares
      well with that obtained for direct sample nebulization. Simple
      relationships for calcn. of the anticipated diln. have been derived and
      validated exptl. Flow configurations were designed to implement **online
      diln**. approaches under optimum conditions. Although these developments
      for **online diln**. are initially intended for sequential multielement ICP
      spectrometric anal., they should prove to be of general use.

=> log y
STN INTERNATIONAL LOGOFF AT 05:03:35 ON 25 SEP 2004

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=> d his

        (FILE 'HOME' ENTERED AT 13:42:39 ON 25 SEP 2004)
        FILE 'CA' ENTERED AT 13:42:48 ON 25 SEP 2004
L1   535 S (SPIKE OR INTERNAL STANDARD)(3A)(DILUT? OR PREPARA?)
L2   160 S L1 AND ISOTOP?
L3    31 S L1 AND(AUTOMAT? OR COMPUTER OR MICROPROCESSOR)
L4    40 S L1 AND(ONLINE OR INLINE OR ONSTREAM OR INSTREAM OR LINE OR STREAM
         OR FLOW INJECT?)
L5    12 S L2 AND L3-4
L6     7 S L3 AND L4
L7    19 S L5-6
L8    50 S L3-4 NOT PY>2000
L9    54 S L7-8


=> d bib,ab 1-54 19


L9    ANSWER 7 OF 54  CA  COPYRIGHT 2004 ACS on STN
AN    130:147958  CA
TI    Device and method for automatic preparation of sample solution.
IN    Morioka, Akihiro; Yamanaka, Kazuo
PA    Yokogawa Analytical Systems K. K., Japan
SO    Jpn. Kokai Tokkyo Koho, 9 pp.
PI    JP 11006788          A2     19990112    JP 1997-175146          19970617
PRAI  JP 1997-175146              19970617
AB    The title device is used for automatic sample soln. prepn. such as
      diln. before anal. by inductively coupled plasma mass spectrometry or
      at. emission spectrometry.  The device comprises a sample soln.
      container, a diln. soln. container, a mixer, sample soln. and diln.
      soln. supply means, and a means to calibrate the final concn. using the
      internal std. stored in the diln. soln.


L9    ANSWER 37 OF 54  CA  COPYRIGHT 2004 ACS on STN
AN    105:34849  CA
TI    Microrobotics LC autosampler
AU    Bell, J. P.; Simpson, R. A.; Cunico, R. L.
CS    Varian Instr. Group, Walnut Creek Div., USA
SO    American Laboratory (Shelton, CT, United States) (1986), 18(5), 94, 96,
      98, 100, 102-3
AB    The model 9090 low-loss autosampler for liq. chromatog. (LC) is
      designed for reliable, high-throughput operation, yet has the
      flexibility and performance to handle a variety of research needs.
      Programmable automix routines provide built-in liq. handling protocols
      prior to automated anal.  Applications discussed include automated
      precolumn amino acid derivatizations and autodilns.  Potential
      applications include addn. of internal std., diln. of stds. to prep. a
      calibration curve automatically, pipetting reactants for enzyme assays,
      optimizing chem. reactions, and addn. of buffering, stabilizing, or
      modifying agents before injection.


=> log y
STN INTERNATIONAL LOGOFF AT 13:48:19 ON 25 SEP 2004
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